

What is claimed is:

5 1. A method of heating a gas sensor including a ceramic substrate and a heater embedded in said substrate by controlling temperature of said heater, said method comprising the steps of:

10 increasing temperature of said heater rapidly when temperature of said substrate is low; and increasing temperature of said heater slowly when temperature of said substrate is high.

15 2. A method according to claim 1, wherein temperature of said heater is increased slowly when temperature of said substrate is equal to or greater than 600 degrees centigrade.

20 3. A method according to claim 1, wherein temperature of said heater is increased at a speed equal to or less than 40 degrees centigrade/sec. when temperature of said substrate is equal to or greater than 600 degrees centigrade.

4. A method according to claim 1, wherein temperature of said heater is increased rapidly when temperature of said substrate is equal to or less than 500 degrees centigrade.

25 5. A method according to claim 1, wherein temperature of said heater is increased at a speed greater than 20 degrees centigrade/sec., equal to or less than 100 degrees

centigrade/sec. when temperature of said substrate is equal to or less than 500 degrees centigrade.

5 6. A method according to claim 1, wherein voltage applied to said heater changes depending on time passed for increasing temperature of said heater, according to an exponential curve.

10 7. A method according to claim 1, wherein said heater has a heating unit, and resistance of said heating unit is measured and controlled for increasing temperature of said heater.

15 8. A gas sensor having a ceramic substrate and a heater embedded in said substrate, said gas sensor comprising:
means for measuring resistance of a heating unit of said heater; and

means for controlling a rate of increasing resistance of said heating unit per unit time.

20 9. A gas sensor according to claim 8, wherein said resistance measuring means comprises at least one measuring lead for measuring resistance of said heating unit.